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# PUBLIC HEALTH REPORTS

VOL. 37

SEPTEMBER 29, 1922

No. 39

## COOPERATIVE RURAL HEALTH WORK OF THE PUBLIC HEALTH SERVICE IN THE FISCAL YEAR 1922.

By L. L. LUMSDEN, Surgeon, United States Public Health Service.

The results of the cooperative rural health work of the Public Health Service in the fiscal year ended June 30, 1922, were entirely in support of the conclusions in the reports on this activity in the fiscal years 1920<sup>1</sup> and 1921.<sup>2</sup>

The amounts specifically appropriated by Congress for Special Studies of and Demonstration Work in Rural Sanitation and made available for the cooperative rural health work of the Public Health Service have been as follows:

Fiscal year.	Amount.
1917.....	\$25,000
1918.....	150,000
1919.....	150,000
1920.....	50,000
1921.....	50,000
1922.....	50,000

In view of the need of health service in our rural communities generally and the proved practicability, effectiveness, and economy of the plan which had been followed for the several previous years, it appeared that an enlargement of the scale of activities of the Public Health Service in cooperative rural health work in the fiscal year 1922 would be warranted. The demonstrations in the fiscal years 1920 and 1921, though good as far as they went, did not cover enough ground to make much impression upon the general situation. The estimate of appropriation made by the Bureau of the Public Health Service and approved by the Treasury Department and submitted to Congress "for special studies of and demonstration work in rural sanitation" in the fiscal year 1922 was \$500,000. The amount appropriated, \$50,000, enabled the Public Health Service to meet but a small proportion of the requests from State and local authorities for cooperation in the development of demonstration projects.

<sup>1</sup> Page 15, Reprint No. 615 from Public Health Reports, Oct. 1, 1920.

<sup>2</sup> Page 17, Reprint No. 699 from Public Health Reports, Oct. 7, 1921.

At the termination of the fiscal year 1921, \$13,754.72, unexpended under contracts made during that year, remained available. This amount, with the \$50,000 appropriated, made \$63,754.72 available for the cooperative rural health work of the Public Health Service in the fiscal year beginning July 1, 1921. Of this sum, \$44,816.04 was expended under allotments for cooperative projects in counties and \$5,630.26 was expended for administration, supervision of local projects, and special studies of the problem of rural sanitation. The unexpended balance of the total sum available was included in allotments to some of the cooperative projects which, because of various local circumstances, could not be completed by the end of the fiscal year. With the existing difference between the Federal fiscal year and the fiscal years of some of the States and localities in which the work is done, it would not be practicable, without lessening the degree of economy in administration striven for, to arrange contracts so that the allotment of Federal funds to every project would be expended exactly by the end of the Federal fiscal year.

During the fiscal year 1922, cooperative projects were carried out in 56 counties (or districts comparable to counties) in 16 States. The total expenditure for the support of the local projects was \$406,276.78. Of this sum an aggregate of \$284,839.85 was provided from State, county, and municipal governmental sources; \$76,620.89 from civic sources, such as local health associations, local Red Cross chapters, and the International Health Board; and \$44,816.04 from the rural sanitation funds of the Public Health Service. Thus this investment of Federal funds was met with odds of over 8 to 1 for the support of the work. The proportion of the expenses covered with funds from local sources is significant. It gives some idea of the stimulating effect of the cooperation of the Federal Government and suggests what might be accomplished without unnecessary and disastrous delay in this vitally important nation-wide field if sufficient funds were made available for the purpose to enable the Federal Government to extend this plan of cooperation in the rural health business to a reasonably adequate degree.

The amounts of money expended from the different sources for the support of the projects and the scope and the results of the work are presented in the accompanying tabular statement.

*Compilation of data, by counties, on cooperative demonstration work in rural sanitation in the fiscal year 1922.*

Counties (or districts).....	Arlington, Va.	Bell County, Ky.	Cape Cod Health District, Massa- chusetts.	Cape Girardeau, Mo.	Cascade, Mont.	Chaves, N. Mex.	Cherokee, Kans.	Clarke, Ga.	Colbert, Ala.	Cum- berland, N. C.	Dubuque, Iowa.
Period of work in fiscal year 1922.....	July 1, 1921, to June 30, 1922.	Jan. 1, 1922, to June 30, 1922.	July 1, 1921, to June 30, 1922.	Feb. 1, 1922, to June 30, 1922.	July 1, 1921, to June 30, 1922.	July 1, 1921, to Dec. 20, 1921.	July 1, 1921, to June 30, 1922.	July 1, 1921, to June 30, 1922.	July 1, 1921, to June 30, 1922.	July 1, 1921, to June 30, 1922.	July 1, 1921, to June 30, 1922.
Expenditures:											
(a) Rural sanitation fund (P. H. S.).....	\$2,399.92	\$352.00	\$2,499.96	\$500.00	\$3,072.57	\$850.00	\$300.00	\$1,990.92	\$300.00	\$999.96	\$300.00
(b) State.....	125.00	1,719.28	.....	1,000.00	.....	.....	.....	.....	1,200.00	999.96	.....
(c) County.....	16,378.00	6,017.49	.....	625.00	6,959.60	2,085.95	5,681.03	6,968.19	6,961.23	7,556.71	8,015.16
(d) Municipalities.....	.....	.....	.....	350.00	6,959.59	.....	.....	5,035.00	.....	.....	8,923.45
(e) Other agencies.....	3,096.00	.....	6,769.30	525.00	2,025.00	2,431.30	2,471.59	.....	550.00	1,323.30	.....
Total.....	21,999.92	8,098.77	9,269.26	3,000.00	19,016.76	5,367.25	8,452.62	14,031.11	9,011.26	10,879.63	17,238.61
Number of lectures.....	67	576	37	47	52	105	123	194	141	140	50
Attendance at lectures.....	1,840	28,770	3,753	2,847	2,305	3,095	9,519	9,780	4,866	9,050	5,251
Pieces of literature distributed.....	6,660	6,316	4,061	1,356	2,579	2,992	5,991	11,770	8,150	10,055	1,243
Sanitary inspections:											
(1) Private homes.....	5,302	3,632	74	72	.....	2,785	76	5,022	281	2,426	1,578
(2) Schools.....	108	6	78	19	1	47	138	286	118	167	328
(3) Churches.....	36	25	1	.....	.....	.....	.....	4	.....	.....	.....
(4) Stores, markets, etc.....	584	350	13	27	390	223	360	439	996	1,030	1,730
Total.....	6,030	4,013	166	118	391	3,055	574	5,751	1,396	3,683	3,636
Special inspections:											
Food product places.....	110	276	36	11	213	80	215	41	369	162	78
Physical examination of school children:											
(1) Number examined.....	3,137	2,224	4,017	1,001	4,914	1,267	7,834	2,137	4,761	2,705	25,472
(2) Number found defective.....	1,695	1,816	3,468	766	4,198	1,040	6,388	1,727	2,829	1,689	13,187
Number of treatments induced for correc- tion of physical defects in school children	1,668	146	521	253	206	71	1,962	641	201	381	1,186
Public health nursing:											
(1) Number of visits to cases of com- municable diseases.....	54	180	83	29	8	217	133	504	291	254	547
(2) Number of talks given to groups of persons.....	312	235	317	120	36	79	157	41	260	123	186

*Compilation of data, by counties, on cooperative demonstration work in rural sanitation in the fiscal year 1922—Continued.*

Counties (or districts).....	Arlington, Va.	Bell County, Ky.	Cape Cod Health District, Massa- chusetts.	Cape Grardeau, Mo.	Cascade, Mont.	Chaves, N. Mex.	Cherokee, Kans.	Clarke, Ga.	Colbert, Ala.	Cum- berland, N. C.	Dubuque, Iowa.
Period of work in fiscal year 1922.....	July 1, 1921, to June 30, 1922.	Jan. 1, 1922, to June 30, 1922.	July 1, 1921, to June 30, 1922.	Feb. 1, 1922, to June 30, 1922.	July 1, 1921, to June 30, 1922.	July 1, 1921, to Dec. 20, 1921.	July 1, 1921, to June 30, 1922.	July 1, 1921, to June 30, 1922.	July 1, 1921, to June 30, 1922.	July 1, 1921, to June 30, 1922.	July 1, 1921, to June 30, 1922.
Public Health Nursing—Continued.											
(3) Number of visits to give prenatal care.....	.....	82	.....	16	8	84	168	321	.....	300	120
(4) Number of visits to explain and demonstrate infant hygiene.....	336	359	3	120	305	590	252	345	2	783	863
Laboratory examinations:											
Positive.....	222	183	35	16	266	.....	4	64	50	241	896
Negative.....	1,519	360	277	111	1,608	.....	.....	164	144	1,272	4,070
Total.....	1,741	543	312	127	1,874	424	4	228	194	1,513	4,933
Immunization:											
(1) Number of complete antityphoid inoculations.....	87	237	6	.....	38	14	32	1,575	815	1,954	.....
(2) Number of complete antismalari- ox inoculations.....	61	23	2	.....	1,012	112	2,594	1,066	85	2,019	126
(3) Number of complete antipneumo- nia inoculations.....	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
(4) Number of complete diphtheria toxin-antitoxin inoculations.....	(1)	(1)	(1)	(2)	(1)	830	(1)	(2)	(2)	(2)	(1)
Antimalaria work.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Number of persons treated for removal of hookworm infection.....	1	11	.....	.....	.....	.....	.....	.....	.....	.....	.....
Veneral-disease prevention:											
(1) Number of prophylactic treat- ments.....	.....	.....	1	.....	.....	.....	17	.....	17	16	.....
(2) Number of curative treatments.....	.....	738	.....	.....	417	.....	13	.....	.....	232	4
Number of visits by health officer or his assistant:											
(1) To diagnose suspected cases in- fectious disease.....	60	65	102	61	590	71	54	19	141	288	109
(2) To impose quarantine measures.....	60	48	13	132	.....	77	17	20	45	229	331
Number of cases quarantined.....	54	45	52	171	580	62	445	35	77	280	331

Sanitary privies installed:												
L. R. S.												
Concrete vaults.....												4
Bucket and box.....												66
Pits.....	194	1,209	2									2
Total.....	194	1,209	2	5								56
Septic tanks installed.....												
Number of privies repaired so as again to be of sanitary construction.....	142											19
Number of new sewer connections.....	800		6	2	446							1,187
Number of new water connections.....	100	100	3	6	72							14
Number of wells improved.....	30		3		55							35
Number of springs improved.....			1	2								123
Number of public milk supplies radically improved.....	56											3
Number of life extension examinations.....	149			71	128							10
												23
												102
												118
Counties (or districts).....												
Edgecombe, N. C.	July 1, 1921, to June 30, 1922.	Eighth Sanitary District of Vermont.	Fauquier, Va.	Glynn, Ga.	Greene, Mo.	Harrison, Miss.	Jasper, Mo.	Lauderdale, Ala.	Laurens, Ga.	Lewis and Clark, Mont.	Logan, W. Va.	
	July 1, 1921, to June 30, 1922.	July 1, 1921, to June 30, 1922.	July 1, 1921, to June 30, 1922.	July 1, 1921, to June 30, 1922.	July 1, 1921, to June 30, 1922.	July 1, 1921, to June 30, 1922.	July 1, 1921, to June 30, 1922.	July 1, 1921, to June 30, 1922.	July 1, 1921, to June 30, 1922.	Dec. 1, 1921, to June 30, 1922.	Feb. 1, 1922, to June 30, 1922.	
Period of work in fiscal year 1922.....												
Expenditures:												
(a) Rural sanitation fund (P. H. S.).....	\$999.98	\$2,640.00	\$300.00	\$300.00	\$321.25	\$1,200.00	\$1,289.90	\$1,175.00	\$300.00	\$1,736.29	\$125.00	
(b) State.....	1,499.94	4,166.88	3,394.97	300.00	300.00	222.46	2,723.98	2,200.00	4,320.00	1,380.69	502.64	
(c) County.....	4,675.62		3,754.12	10,883.75	2,700.00	11,004.17	1,230.50	3,038.67		1,380.69	2,332.39	
(d) Municipalities.....				3,625.13	10,225.49	2,995.36	7,585.23	2,375.68		1,380.69		
(e) Other agencies.....	1,516.47		640.78							375.00	344.25	
Total.....	8,692.01	6,806.88	8,089.87	14,808.88	23,046.74	15,421.99	13,109.61	7,809.35	4,620.00	4,872.67	3,304.28	
Number of lectures.....	18	2	50	18	438	223	22	96	221		21	
Attendance of lectures.....	1,365	125	2,465	405	19,992	14,160	1,373	6,685	25,050		1,140	
Pieces of literature distributed.....	1,723	975	3,647	1,911	11,015	3,200	1,944	7,258	4,680	299	221	
Sanitary inspections:												
(1) Private homes.....	1,434	11	922	2,098	31	3,664	812	4,742	191	68	11	
(2) Schools.....		31	39	13	111	94	49	178	118	21	21	
(3) Churches.....						30					4	
(4) Stores, markets, etc.....	1,377	546	190	974	2	4,447	239	217	191	76	12	
Total.....	2,811	588	1,151	3,015	144	8,235	1,100	5,137	504	165	46	

\* Considerable.

\* Little.

1 None

*Compilation of data, by counties, on cooperative demonstration work in rural sanitation in the fiscal year 1922—Continued.*

Counties (or districts).....	Edgecombe, N. C.	Eighth Sanitary District of Vermont.	Fauquier, Va.	Glynn, Ga.	Greene, Mo.	Harrison, Miss.	Jasper, Mo.	Lauderdale, Ala.	Laurens, Ga.	Lewis and Clark, Mont.	Logan, W. Va.
Period of work in fiscal year 1922.....	July 1, 1921, to June 30, 1922.	July 1, 1921, to June 30, 1922.	July 1, 1921, to June 30, 1922.	July 1, 1921, to June 30, 1922.	July 1, 1921, to June 30, 1922.	July 1, 1921, to June 30, 1922.	July 1, 1921, to June 30, 1922.	July 1, 1921, to June 30, 1922.	July 1, 1921, to June 30, 1922.	Dec. 1, 1921, to June 30, 1922.	Feb. 1, 1922, to June 30, 1922.
Special inspections:											
Food product places.....	406	391	35	103	12	91	65	280	39	172	.....
Physical examination of school children:											
(1) Number examined.....	634	5,654	1,568	1,511	1,561	1,458	1,433	3,506	2,438	1,024	1,345
(2) Number found defective.....	209	4,104	1,067	744	1,426	903	1,062	1,771	1,682	864	766
Number of treatment induced for correc- tion of physical defects in school children											
Public health nursing:											
(1) Number of visits to cases of com- municable diseases.....											23
(2) Number of talks given to groups of persons.....	168	29	39	35	809	176	157	72	.....	30	6
(3) Number of visits to give prenatal care.....	32	193	93	.....	424	142	106	24	.....	25	37
(4) Number of visits to explain and demonstrate infant hygiene.....	165	58	30	.....	500	55	130	63	.....	1	8
	698	89	76	.....	1,656	43	216	70	.....	2	236
Laboratory examinations:											
Positive.....	61	44	62	107	781	494	146	145	629	36	21
Negative.....	158	754	41	368	566	1,063	609	704	539	52	20
Total.....	219	798	103	475	1,347	1,557	755	849	1,168	88	41
Immunization:											
(1) Number of complete antityphoid inoculations.....	1,489	.....	347	453	403	75	932	2,363	1,835	.....	61
(2) Number of complete antismallpox inoculations.....	855	.....	23	999	5,390	270	5,792	59	1,113	812	1,115
(3) Number of complete antipneu- monia inoculations.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....
(4) Number of complete diphtheria toxin-antitoxin inoculations.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Antimalaria work.....	1	402	.....	.....	.....	.....	.....	.....	.....	(1)	(1)
Number of persons treated for removal of hookworm infection.....	(1)	(1)	(4)	(4)	(2)	(4)	(1)	(4)	(2)	(1)	(1)
	1	.....	14	72	.....	698	.....	10	270	.....	.....

<b>Venercal-disease prevention:</b>											
(1) Number of prophylactic treatments.....	1	73	.....	382	6,311	130	530	.....	1,070	35	.....
(2) Number of curative treatments.....	119	.....	.....	.....	.....	.....	.....	.....	27	.....	4
Number of visits by health officer or his assistant:											
(1) To diagnose suspected cases infectious disease.....	262	10	.....	23	17	48	.....	215	135	187	24
(2) To impose quarantine measures.....	526	2	.....	22	215	23	.....	47	65	108	26
Number of cases quarantined.....	608	70	67	18	245	165	.....	68	70	202	17
<b>Sanitary privies installed:</b>											
L. R. S.....											
Concrete vaults.....	34	1	80	.....	6	23	21	.....	12	15	.....
Bucket and box.....	55	.....	41	.....	26	107	60	.....	172	223	.....
Pits.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	89	1	130	12	34	130	120	269	533	.....	26
<b>Septic tanks installed:</b>											
Number of privies repaired so as again to be of sanitary construction.....	574	6	75	27	30	852	33	406	73	.....	.....
Number of new sewer connections.....	49	.....	15	.....	.....	135	73	64	55	14	.....
Number of new water connections.....	.....	.....	13	.....	.....	.....	89	57	58	13	1
Number of wells improved.....	.....	.....	12	.....	2	.....	47	61	44	.....	.....
Number of springs improved.....	.....	.....	4	.....	.....	8	.....	4	.....	.....	.....
Number of public milk supplies radically improved.....	.....	.....	1	20	.....	14	22	7	21	.....	.....
Number of life extension examinations.....	53	.....	.....	.....	13	.....	6	1,204	.....	.....	.....
<b>Counties (or districts).....</b>											
Madison, Ala.....	July 1, 1921, to June 30, 1922.....	Marion, Ala.....	Mason, Ky.....	Mingo, W Va.....	Monroe, Mo.....	New Madrid, Mo.....	Nodaway, Mo.....	Ottawa, Okla.....	Pettis, Mo.....	Polk, Mo.....	Sampson, N. C.....
<b>Period of work in fiscal year 1922.....</b>											
<b>Expenditures:</b>											
(a) Rural sanitation fund (F. H. S.).....	\$2,500.00	\$120.00	\$1,983.33	\$125.00	\$400.00	\$283.34	\$662.50	\$300.00	\$300.00	\$200.00	\$225.00
(b) State.....	1,011.01	975.00	1,841.41	919.26	575.00	283.34	479.35	401.58	401.58	200.00	1,874.97
(c) County.....	6,871.39	1,141.95	3,682.81	2,280.68	1,587.30	750.00	1,747.63	3,163.03	498.80	694.40	2,432.30
(d) Municipalities.....	3,041.70	.....	.....	.....	550.00	200.00	750.00	2,533.42	1,238.96	924.93	.....
(e) Other agencies.....	4,336.70	.....	1,841.41	919.26	.....	.....	.....	.....	.....	.....	.....
Total.....	17,760.80	2,236.95	9,348.96	4,244.20	3,112.30	1,516.68	3,639.48	5,996.45	2,439.34	2,019.33	4,532.27

: Considerable.

: Little.

: None.



*Compilation of data, by counties, on cooperative demonstration work in rural sanitation in the fiscal year 1922—Continued.*

Counties (or districts).....	Madison, Ala.	Marion, Ala.	Mason, Ky.	Mingo, W. Va.	Monroe, Mo.	New Mad- rid, Mo.	Nodaway, Mo.	Ottawa, Okla.	Pettis, Mo.	Polk, Mo.	Sampson, N. C.
Period of work in fiscal year 1922.....	July 1, 1921 to June 30, 1922.	July 1, 1921 to June 30, 1922.	July 1, 1921 to June 30, 1922.	Feb. 1, 1922 to June 30, 1922.	Feb. 1, 1922 to June 30, 1922.	Apr. 1, 1922 to June 30, 1922.	Feb. 1, 1922 to June 30, 1922.	July 1, 1921 to June 30, 1922.	Apr. 15, 1922 to June 30, 1922.	Apr. 1, 1922 to June 30, 1922.	Oct. 1, 1921 to June 30, 1922.
Number of lectures.....	\$17	\$66	\$328	\$25	\$140	\$8	\$109	\$40	.....	\$87	\$9
Attendance at lectures.....	2,405	7,249	8,467	1,387	2,782	236	3,607	1,147	.....	2,223	75
Pieces of literature distributed.....	4,990	3,945	4,013	2,064	3,212	267	2,159	2,535	\$399	1,818	608
Sanitary inspections:											
(1) Private homes.....	9,282	667	322	470	31	27	.....	55	1	239	784
(2) Schools.....	80	118	386	14	110	11	87	39	3	14	11
(3) Churches.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
(4) Stores, markets, etc.....	215	90	50	5	.....	.....	.....	222	.....	.....	2
Total.....	9,557	875	758	489	141	38	87	316	4	253	797
Special inspections:											
Food product places.....	480	.....	813	5	87	2	3	85	.....	8	.....
Physical examination of school children:											
(1) Number examined.....	3,637	.....	5,190	373	2,384	46	400	762	179	840	7,347
(2) Number found defective.....	2,055	.....	1,654	286	1,698	45	316	623	130	670	4,931
Number of treatments induced for correc- tion of physical defects in school children	225	.....	1,983	51	4	.....	60	18	25	.....	434
Public health nursing:											
(1) Number of visits to cases of com- municable diseases.....	350	.....	145	209	36	218	122	18	89	24	90
(2) Number of talks given to groups of persons.....	131	.....	155	27	35	.....	.....	14	.....	37	4
(3) Number of visits to give prenatal care.....	11	.....	106	.....	.....	3	15	13	9	222	7
(4) Number of visits to explain and demonstrate infant hygiene.....	354	.....	206	37	26	215	144	23	315	20	6
Laboratory examinations:											
Positive.....	829	.....	294	60	2	.....	11	5	4	.....	2
Negative.....	2,453	.....	577	59	.....	3	69	4	52	.....	4
Total.....	3,282	.....	871	119	2	3	80	9	56	24	6



*Compilation of data, by counties, on cooperative demonstration work in rural sanitation in the fiscal year 1922—Continued.*

Counties (or districts)	San Miguel, N. Mex.	Santa Fe, N. Mex.	Surry, N. C.	Talladega, Ala.	Union, N. Mex.	Walker, Ala.	Walker, Ga.	Washington Parish, La.	Wise, Va.	14 Virginia counties.	Total.
Period of work in fiscal year 1922.....	July 1, 1921, to Dec. 31, 1921.	July 1, 1921, to June 30, 1922.	Oct. 1, 1921, to June 30, 1922.	July 1, 1921, to June 30, 1922.	July 1, 1921, to June 30, 1922.	July 1, 1921, to June 30, 1922.	July 1, 1921, to June 30, 1922.	Nov. 1, 1921, to June 30, 1922.	July 1, 1921, to June 30, 1922.	July 1, 1921, to June 30, 1922.	
Expenditures:											
(a) Rural sanitation fund (P. H. S.).....	\$750.00	\$725.00	\$225.00	\$1,999.87	\$600.00	\$900.00	\$1,487.50	\$1,287.50	\$300.00	\$4,970.25	\$44,816.04
(b) State.....			749.97	1,187.53		300.00		1,333.31	5,920.72	10,438.88	44,823.49
(c) County.....	4,404.29	7,486.10	4,357.96	5,100.33	6,888.73	4,999.92	4,556.68	2,340.00	5,920.73	24,305.00	209,290.81
(d) Municipalities.....					663.47	2,520.00	240.00	149.49			30,725.55
(e) Other agencies.....		2,250.00	191.63	2,929.36							76,620.89
Total.....	5,154.29	10,461.10	5,524.56	11,217.09	8,154.20	8,719.92	6,284.18	5,110.33	12,141.45	39,715.13	406,276.78
Number of lectures.....	77	114	92	72	28	181	107	76	108	491	4,766
Attendance at lectures.....	3,225	4,022	6,002	3,019	2,357	6,662	7,365	7,297	7,829	46,366	277,519
Pieces of literature distributed.....	29,280	6,422	2,340	4,962	7,018	14,220	1,814	1,214	27,626	91,652	309,604
Sanitary inspections:											
(1) Private homes.....	1,165	4,909	2	275	2,027	2,023	1,890	539	5,851	16,490	82,191
(2) Schools.....	45	205	33	24	88	116	169	72	105	856	4,357
(3) Churches.....	19			3	5			13			143
(4) Stores, markets, etc.....	203	818	15	170	161	279	383	162			17,218
Total.....	1,432	5,932	50	472	2,281	2,418	2,442	786	5,956	17,346	104,139
Special inspections:											
Food product places.....	5	137	5	163	1		14	131	11	208	5,343
Physical examination of school children:											
(1) Number examined.....	1,259	5,205	5,023	2,958	2,123	6,361	3,902	2,843	9,978		142,431
(2) Number found defective.....	754	3,178	3,337	1,756	692	3,477	2,269	1,941	7,686		91,140
Number of treatments induced for correc- tion of physical defects in school children	565	579	68	325	4	330	20	163	613		16,645
Public health nursing:											
(1) Number of visits to cases of com- municable diseases.....	54	1,237	42	231	225	693	58	47	173		7,882
(2) Number of talks given to groups of persons.....	38	139	117	564	31	293		21	308		4,856
(3) Number of visits to give prenatal care.....	112	133	238	17	42	33		5	19		3,094
(4) Number of visits to explain and demonstrate infant hygiene.....	406	6	268	263	132	118		9	37		9,629

Laboratory examinations:											
Positive.....	15	156	12	179	106	226	34	276	750	7,434	
Negative.....	38	1,461	3	918	1,831	385	42	239	843	23,430	
Total.....	53	1,647	15	1,097	1,937	611	76	515	1,593	43,112	
Immunization:											
(1) Number of complete antityphoid inoculations.....		627	1,756	661	7	3,588	2,316	598	46	416	25,540
(2) Number of complete anismalpox inoculations.....	645	1,245	178	205	478	84			955	634	38,241
(3) Number of complete antipneumonia inoculations.....											21
(4) Number of complete diphtheria toxin-antitoxin inoculations.....	400	394	1,026		825						3,887
Antimalaria work.....	(1)				(1)					(1)	
Number of persons treated for removal of hookworm infection.....				23		84					
Veneral-disease prevention:											
(1) Number of prophylactic treatments.....											2,241
(2) Number of curative treatments.....	10	97	16	2,591	1				7		371
Number of visits by health officer or his assistant:									4,606		23,985
(1) To diagnose suspected cases infectious disease.....	154	833	16	92	178	203	38	11	634		5,933
(2) To impose quarantine measures.....	137	1,200	31	55	147	140	25		85		4,775
Number of cases quarantined.....	135	237	226	63	146	275	19	4	437		5,896
Sanitary privies installed:											
L. R. S.....				18		17	14		3	98	353
Concrete vaults.....							37		2	958	560
Bucket and box.....				153		362	24	120	2	622	2,835
Pits.....	97	798	6	162	77	484	47	155	887	3,666	9,804
Total.....	97	798	6	333	79	863	122	275	895	4,644	13,552
Septic tanks installed.....											
Number of privies repaired so as again to be of sanitary construction.....								38		174	412
Number of new sewer connections.....	216	1,350		14	357	419	20	64	450	617	8,420
Number of new water connections.....		1,112		111		89	28		109	211	2,301
Number of wells improved.....	119	74		58		132	22	146	108	135	2,095
Number of springs improved.....				33		51	18	8	11	104	751
Number of public milk supplies radically improved.....			2	3	2	14		1	3	47	104
Number of life extension examinations.....	31			11	28	3	2	40	1		539
		2	108	45		7		6			2,299

1 None.

2 Little.

3 Considerable.

4 Details not given for 448 examinations.

### Plan of Work.

The plan of work in the fiscal year 1922 was practically identical with that <sup>3</sup> carried out in the fiscal year 1921. This plan has proved economical and effective under a wide range of local conditions. No radical change in it appears advisable, but a wide extension of it, as soon as practicable, does appear advisable.

### The Cape Cod Project.

The cooperative health work begun in May, 1921, under the direction of a whole-time district health officer, in 10 of the 14 towns in Cape Cod, Mass.,<sup>4</sup> has progressed very satisfactorily. This project is of especial interest in that it furnishes a test of the applicability of the general plan of cooperative rural health work to the conditions of local government by town units obtaining in Massachusetts and other New England States. After the first year of this experiment, the number of towns in the Cape entering into the cooperative project was increased from 10 to 11, and the funds provided by the town governments for the support of the district health department in its second year of activity were increased from \$5,100 to \$6,115. A few months after the active work was begun the district health department's force was augmented by a health nurse whose services are provided through the cooperation of local Red Cross chapters. The increase in the budget from the local sources for the support of the activity in its second year is evidence that the cooperative rural health project in Cape Cod is regarded by the local citizens as a good public business.

### Special Demonstration Work in Virginia Counties.

The plan of special demonstration work in rural sanitation which was carried out in Virginia in 11 counties in the fiscal year 1920 and in 10 counties in the fiscal year 1921, was carried out in 14 counties <sup>5</sup> in that State, and in 1 county (Marion) in Alabama, in the fiscal year 1922. This plan, which is described in previous reports,<sup>6</sup> has proved highly successful. After three years of trial, it appears to meet better than could any other plan yet proposed, the situations in rural counties in which effective health work, if begun at all, must be begun on a low-cost basis, and in which outdoor sanitary measures, such as control of soil pollution, protection of domestic water supplies, and control of mosquito breeding, are especially indicated in the beginning of the local program of rural health work. Therefore,

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<sup>3</sup> Pages 10, 11, Reprint No. 699 from Public Health Reports of Oct. 7, 1921.

<sup>4</sup> Pages 11, 12, Reprint No. 699 from Public Health Reports of Oct. 7, 1921.

<sup>5</sup> Bath, Carroll, Charlotte, Chesterfield, Greenville, Henry, Mathews, Northumberland, Orange, Prince Edward, Pulaski, Richmond, Roanoke, Wythe.

<sup>6</sup> Pages 10, 12, Reprint No. 615 from Public Health Reports of Oct. 1, 1920, and pages 12, 14, Reprint No. 699 from Public Health Reports of Oct. 7, 1921.

the plan is applicable to many of our rural counties. In a number of instances among the demonstration projects in the Virginia counties, it has been found that on conservative estimates the saving in dollars and cents to the county, accomplished by only 1 or 2 of the 15 or 20 items of work carried out by the sanitary officer in the course of a year, amounted to considerably more than the cost of the sanitary officer's services for that year. The services of the sanitary officer, besides having an immediate and readily apparent value, often result in the development of popular sentiment in the county for an enlarged scale of health activities. In each of a number of the Virginia counties, the county appropriation for health service has been increased sufficiently, after the first or second year of work by the county sanitary officer, to secure the services of a county health nurse or of both a county health nurse and a whole-time county health officer in addition to those of the sanitary officer.

Since the inauguration in Virginia (February, 1919) of the plan of sanitary officer demonstration work in rural sanitation there has been no difficulty in finding in that State counties whose authorities are willing to make appropriations of county money to secure the cooperation of the State board of health and the United States Public Health Service in carrying out the demonstration projects. Whenever the work has been discontinued in one county, one or more counties have been ready with county appropriations to take the place of that county on the cooperative list. Thus, the funds available to the State board of health and the United States Public Health Service for the cooperative demonstration projects in rural sanitation in Virginia are always spread as far as they will go. If the combined funds of the State and Federal cooperating agencies were adequate to meet as much as two-fifths of the total cost, it is probable that whole-time county health service could be developed within a short time in a large majority of the counties in the State which are not now provided with such service. An offer from the central health agencies to supervise and financially assist in the support of the work is a potent factor in the persuasion of the average county board of supervisors to make an appropriation for whole-time county health service. Without such cooperation from the State and Federal health agencies, satisfactory progress in county health work is not to be expected in Virginia—or in any of the other States. The State health commissioner expects to try to obtain from the next Virginia Legislature a sufficient appropriation for rural sanitation to enable the State board of health to offer due and proportionate cooperation in every county in the State whose authorities desire and will appropriate their proportionate part for whole-time county health service. It seems from the evidence at hand

that he will have a good case. It seems, too, that the Public Health Service should have a good case in consistently recommending sufficient appropriations to enable the Federal Government to do its due and proportionate part in cooperative rural health work throughout the United States.

The accompanying statement prepared by Surg. W. F. Draper, who has been detailed since February, 1919, to cooperate with the State board of health in the development and supervision of cooperative rural health projects in Virginia, presents an interesting record of progress in that State.

Annual budgets and working forces for whole-time county health service in Virginia at beginning of each five-year period in last decade.

	County.	Health officers.	Health nurses.	Sanitary inspectors.	Others.	Work began.	Budget.	Sources of funds.					Other agencies.
								Local government.	State government.	United States Public Health Service.	Red Cross.	International Health Board.	
I. Jan. 1, 1912.....													
II. Jan. 1, 1917.....	Norfolk.....	1		2	1	1916	\$8,000	\$8,000					
III. Jan. 1, 1922.....													
	Arlington.....	1	2	1	6	1919	21,500	19,000	\$500	\$2,000			
	Augusta.....	1	1			1917	4,000	4,000					
	Fairfax.....	1	1	1		1917	6,500	6,500					
	Norfolk.....	1	1	4	1	1916	16,000	16,000					
	Albemarle.....	1	1	1	2	1920	10,000	2,500	2,500			\$2,500	\$2,500
	Fauquier.....	1	1	1	1	1919	8,000	1,000	1,250	300		1,250	5,200
	Halifax.....	1	1	1	1	1920	10,000	1,000	2,500		\$4,000	2,500	500
	Tazewell.....	1	1	1	1	1921	7,800	2,600	1,800	300	1,100	2,500	
	Wise.....	1	2	1	1	1921	10,300	5,000	2,500		1,900		900
	Chesterfield.....		1	1		1919	5,800	1,500	1,200	300	1,000		
	Greensville.....		1	1		1919	5,000	2,500	1,200	300	2,000		
	Henry.....		1	1		1919	5,000	1,500	1,200	300	1,000		
	Roanoke.....		1	1		1919	5,000	2,500	1,200	300	1,000		
	Wythe.....		1	1		1921	5,000	2,900	1,200	300	600		
	Bath.....			1		1919	2,500	1,500	700	300			
	Carroll.....			1		1921	2,500	1,500	700	300			
	Charlotte.....			1		1920	2,500	1,500	700	300			
	Pulaski.....			1		1922	2,800	1,500	1,000	300			
	Accomac.....		1			1921	2,500		500		2,000		
	Amherst.....		1			1920	2,500	1,000	500		1,000		1,000
	Bedford.....		1			1920	2,500	1,000	500		1,000		
	Caroline.....		1			1921	2,500		500		2,000		
	Clarke.....		1			1920	2,500		500		800		
	Elizabeth City.....		1			1921	2,500	1,000	500		1,000		1,200
	Essex.....		1			1920	2,500		500		2,000		
	Giles.....		1			1921	2,500		500		1,000		
	Goodland.....		1			1920	2,500	1,000	500				2,000
	Loudoun.....		1			1920	2,500		500				
	Mecklenburg.....		1			1921	2,400		500		1,900		
	Prince Anne.....		1			1920	2,500		500		2,000		
	Prince Edward.....		1			1921	2,000		500				1,500
	Prince George.....		1			1921	2,500		500		2,000		
	Rockbridge.....		1			1920	2,500		500		2,500		
	Nansemond.....		1			1920	2,500		500		2,000		
	Total.....	9	32	20	13		169,600	77,500	27,650	5,300	82,800	10,550	15,800



**General Progress in Rural Health Work.**

Notwithstanding the general financial situation, substantial progress was made in the development of whole-time rural (county) health service in the United States during the fiscal year. According to data <sup>7</sup> collected by the Rural Sanitation Office from the State health departments, the number of counties, or equivalent divisions, provided with local health service reaching all rural sections thereof, under the direction of whole-time county or district health officers, was 203 at the beginning of the calendar year 1922, as against 161 at the beginning of the calendar year 1921, and 109 at the beginning of the calendar year 1920. The gain of 94 within this two-year period signifies that the cooperative demonstrations in rural health work, though as yet lamentably small in number, are making some impression upon the general situation.

During the fiscal year 1922, progress deserving especial mention was continued in Alabama, Georgia, Kansas, Kentucky, Montana, New Mexico, North Carolina, Ohio, Vermont, and Virginia, and was made in Louisiana, Mississippi, Missouri, and West Virginia. In Missouri, a division of rural sanitation was organized in the State board of health and was directed by an officer of the Public Health Service detailed for duty with the State board in developing and supervising county health work; and appropriations, ranging from \$3,600 to \$12,000 a county, were made available from county sources for the support of county health departments on a basis of whole-time service in 9 counties in addition to the 2 in which cooperative rural health projects were being conducted at the beginning of the fiscal year. In 6 of the 9 additional counties whose local authorities made appropriations to secure the cooperation offered by the State board of health, the United States Public Health Service, and the International Health Board, whole-time personnel was engaged and active work was conducted during the year. In West Virginia, to which State also an officer of the Public Health Service is detailed to cooperate with the State board of health in developing and supervising whole-time county health service, arrangements were effected for cooperative health work under the direction of whole-time county health officers in 4 counties previously without such service.

**Results.**

The cooperative projects in the fiscal year ended June 30, 1922, yielded results exceeding in value manyfold the cost of the work. Among the results presented in the tabular statement (pp. 2353 to 2361), to which especial consideration may be given, are—

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<sup>7</sup> Pages 1794-1799, Public Health Reports, vol. 37, No. 29, July 21, 1922. Reprint No. 771.

1. Public lectures presenting the principles and details of sanitation to over 277,000 persons.

2. Over 104,000 sanitary inspections of premises, with explanation of findings to occupants (or owners) of the properties.

3. Physical examination of over 142,000 school children, of whom over 91,000 were found to have incapacitating physical defects, with notification of parents, or guardians, of defects found.

4. Sixteen thousand six hundred and forty-five recorded treatments effecting correction of incapacitating physical defects among school children, brought about by written notifications to parents or guardians, follow-up visits to homes of the children, making available proper clinical facilities, and other activities of the county, or district, health departments.

5. Seven thousand eight hundred and eighty-two visits by health nurses to homes of cases of communicable disease to advise and show the afflicted households how to prevent the spread of the infections.

6. Three thousand and ninety-four visits by health nurses to pre-natal cases to advise with and assist expectant mothers in carrying out hygienic and physiological measures making for healthy mothers and healthy babies.

7. Nine thousand six hundred and twenty-nine home visits by health nurses to demonstrate hygienic measures for the promotion of the health and the protection of the lives of infants.

8. Twenty-five thousand five hundred and forty persons inoculated for protection against typhoid fever.

9. Thirty-eight thousand two hundred and forty-one persons vaccinated against smallpox.

10. Three thousand eight hundred and eighty-seven children inoculated with toxin-antitoxin mixture for immunization against diphtheria.

11. Two thousand two hundred and forty-one persons treated effectively for relief from hookworm disease and for the prevention of the spread of the infection.

12. Marked reduction in the spread of malaria in hundreds of localities, with an aggregate population of several hundred thousand.

13. Twenty-three thousand nine hundred and eighty-five treatments to rid persons of venereal disease infection and prevent the spread of the infection.

14. Five thousand eight hundred and ninety-six cases of dangerous communicable diseases quarantined to prevent spread of infection in the local community, the State, and throughout the country.

15. The installation of 13,552 sanitary privies and 412 septic tanks at dwellings where previously there had been either grossly insanitary privies or no toilets of any sort.

16. Eight thousand four hundred and twenty privies repaired so as again to be of sanitary type.

17. Two thousand three hundred and one homes connected for the first time with sanitary sewers.

18. Two thousand nine hundred and fifty homes provided with clean water supplies in place of contaminated water supplies.

19. Radical improvement of 539 public milk supplies, the milk from which was being distributed to a considerable extent through the channels of interstate commerce, to prevent the spread, through milk and milk products, of such infections as those of typhoid fever, scarlet fever, diphtheria, tuberculosis, septic sore throat, and infant diarrhea.

20. Two thousand two hundred and ninety-nine citizens over 40 years of age examined and advised about measures to conserve their vital capital.

Such results indicate that the plan of the work is both comprehensive and effective. On the details of the work in any one of the projects, a voluminous report might be written without doing more than scant justice to their importance. Not for comparison but merely for example, specific results in a few of the separate cooperative projects are here cited:

(a) In Madison County, Ala., a remarkable reduction in the death rate has been effected. The cooperative health work, under the direction of a whole-time county health officer, was begun in 1918. For the immediately preceding 10 years the annual death rate averaged over 19 per 1,000 of population. In the calendar year 1921 it was 12.6. The death rate among infants of less than 1 year, in 1921, was only 77 per 1,000 births. The population of Madison County is about 50,000. A lowering of the death rate by seven points, therefore, means 350 less deaths a year. The total annual expenditures for the support of the county health service have averaged about \$14,400 in the last three fiscal years. Saving lives of American citizens at a cost of less than \$50 a life saved seems reasonably good business.

(b) In Mason County, Ky., the county health department, in the course of its general program of health work within the last several years, has accomplished a high degree of success in securing vaccination of the local population against smallpox. In the winter of 1921-22, smallpox, much of which was of malignant type, was highly prevalent within the vicinity of Mason County. In two villages, located near the Mason County line, in an adjoining county, 55 cases developed within the period December 1, 1921, to April 1, 1922. Within that period, not a single case developed among the residents of Mason County.

(c) In the Eighth Sanitary District of Vermont, the potential value of health work among school children, to both the individual and the community, was exemplified by an instance remarkable because of its completeness. The whole-time district health officer, in the course of his first round of physical examination of school children, found, in October, 1919, at one of the large graded schools, 16 pupils of widely different ages who, because they were unable to keep up with their respective classes, were regarded as mentally backward and were assigned to a special room for simple instructions. Upon carefully examining the 16 children, the health officer found that every one had one or more marked physical defects, among which decayed teeth, enlarged tonsils, adenoids, faulty eyesight, and poor hearing were common. With the cooperation of the school directors, the health officer, within the next few months, by appeals to the parents and through special arrangements with local physicians, succeeded in having corrected almost all of the physical defects found among the group. On reexamination of the pupils a year later, it was found that all of the previously backward children had been returned to their proper grades and were keeping up in them with their classmates. Another year later, in December, 1921, some of those 16 children were among the physical and mental leaders in their grades.

(d) In Cherokee County, Kans., the county health officer found, on his physical examination of school children in the winter of 1921-22, that 1,871 corrections of physical defects among the children had been made since his examination of them in the previous school term. The work of the county health department to bring about correction of physical defects in school children is but one of the important items in the program of activities of the Cherokee County cooperative project. In the fiscal year 1922, radical improvements were accomplished in outdoor sanitary conditions at hundreds of the rural homes. Two thousand five hundred and ninety-four persons were vaccinated against smallpox, and the county health officer or the county health nurse, or both, visited one or more times every case of tuberculosis known to exist in the county, and gave practical instructions to the patients and to the other members of their households in measures to prevent the spread of tubercular infection.

(e) In Arlington County, Va., the program of rural health work, inaugurated in 1919, has been comprehensive and remarkably effective. The methods of excreta disposal have been changed from insanitary to sanitary at more than 3,600 of the 3,800 homes in the county. Hundreds of sources of domestic water supplies have been changed in character so as to be protected from potentially dangerous contamination. Over 80 per cent of the physical defects found among school children on the first round of inspection have been corrected.

Among the children in three of the larger schools a record of 100 per cent corrections of correctable physical defects has been made. In the fiscal year 1922, the third year of the work, special activities were begun for the promotion of infant and maternity hygiene, for adult life extension, and for tuberculosis control. At the two baby clinics established in the county over 250 babies were examined in the first month of that special activity. All the activities are performed under the direction of one person, the whole-time county health officer. The program furnishes a striking example of a maximum of work with a minimum of overhead expense.

#### Conclusion.

The plan of cooperative rural health work in which the Public Health Service has been engaged during the last several fiscal years has proved economical and effective and should be extended, without unnecessary delay, to meet, to a reasonably adequate degree, the serious need of well-balanced, whole-time local health service in the rural districts of the United States.

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### SICKNESS AMONG NEW YORK STATE FACTORY WORKERS IN 1919.

**Abstract of Special Bulletin No. 108, of the New York State Department of Labor.<sup>1</sup>**

The average per capita loss of working time caused by sickness involving disability of three days to six months, in the State of New York, was 1.1 days for the last half of 1919, according to a report of the New York State Department of Labor on an investigation conducted by the Associated Industries of New York State (Inc.). For the six months the number of cases was 114.4 per thousand employed. The annual rates undoubtedly would be greater than double the figures given for the six months, the report states, since the prevalence of respiratory diseases and epidemics of the late winter and early spring would make the amount of sickness for the first half of the year greater than the amount for the last half. It is stated that for employees covered by this survey the annual per capita loss of time on account of sickness of three days' to six months' duration probably would be about two and one-third days, on the assumption that the amount of sickness was about 10 per cent greater the first half of the year.<sup>2</sup>

The chief reason for the difference between two and one-third days and the estimates commonly given of five to nine days of disability,

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<sup>1</sup> From the Statistical Office, U. S. Public Health Service.

<sup>2</sup> This estimate of 10 per cent is based on the figures given in "Sickness and Absenteeism During 1919 in a Large Industrial Establishment," published by the United States Public Health Service (Reprint No. 611), which showed a 10 per cent higher loss of time in the first half of the year 1919 than in the second half.